

CLAIMS:

1. An implantable tissue-stimulating device comprising:
 - an elongate member having a plurality of electrodes mounted thereon
 - 5 and having a first configuration selected to allow said member to be inserted into an implantee's body, a second configuration wherein said elongate member is adapted to apply a preselected tissue stimulation with the electrodes, and at least one intermediate configuration between said first and second configurations, said elongate member being made of a resiliently
 - 10 flexible first material;
 - a first stiffening element; and
 - at least a second stiffening element;
 - wherein said first stiffening element and said second stiffening element in combination bias said elongate member into said first configuration and
 - 15 further wherein if either the first stiffening element or the second stiffening element is removed, the elongate member adopts said at least one intermediate configuration.
2. A cochlear implant electrode assembly device comprising:
 - 20 an elongate electrode carrier member having a plurality of electrodes mounted thereon and having a first configuration selected to allow said member to be inserted into an implantee's cochlea, a second configuration wherein said elongate member is curved to match a surface of said cochlea, and at least one intermediate configuration between said first and second
 - 25 configurations, said elongate member being made of a resiliently flexible first material;
 - a first stiffening element; and
 - at least a second stiffening element;
 - wherein said first stiffening element and said second stiffening element
 - 30 in combination bias said elongate member into said first configuration and further wherein if either the first stiffening element or the second stiffening element is removed, the elongate member adopts said at least one intermediate configuration.
3. A device of claim 1 or claim 2 wherein the second configuration of the elongate member is curved.

4. A device of claim 3 wherein the elongate member adopts a spiral configuration when in the second configuration.
- 5 5. A device of claim 1 or claim 2 wherein the elongate member is preformed from a plastics material with memory and is preformed to the second configuration.
6. A device of claim 1 or claim 2 wherein the elongate member has a first
10 end that is firstly inserted into the implantee.
7. A device of claim 1 or claim 2 wherein the first configuration is at least substantially straight.
- 15 8. A device of claim 1 or claim 2 wherein the elongate member is formed from a biocompatible material selected from the group comprising a silicone and a polyurethane.
9. A device of claim 1 or claim 2 wherein the first and second stiffening
20 elements are formed of the same material.
10. A device of claim 1 or claim 2 wherein the first stiffening element is made of a material that is relatively stiffer than the first material.
- 25 11. A device of claim 10 wherein the second stiffening element is relatively stiffer than said first stiffening element.
12. A device of claim 11 wherein the second stiffening element has a greater diameter than the first stiffening element.
- 30 13. A device of claim 1 or claim 2 wherein at least the first stiffening element is formed of a bioresorbable material which dissolves or softens on exposure to a fluid.
- 35 14. A device of claim 13 wherein the bioresorbable material of said at least first stiffening element is selected from the group comprising polyacrylic acid

(PAA), polyvinyl alcohol (PVA), polylactic acid (PLA) and polyglycolic acid (PGA).

15 15. A device of claim 1 or claim 2 wherein at least the first stiffening element is formed from a non-bioresorbable material.

16. A device of claim 15 wherein at least the first stiffening element is a metallic or plastic stylet.

10 17. A device of claim 16 wherein the second stiffening element is a metallic or plastic stylet.

18. A device of claim 17 wherein the respective stylets extend through a single lumen in the elongate member.

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19. A device of claim 17 wherein one of said stylets can extend through a lumen of the other stylet.

20. A device of claim 1 or claim 2 wherein the first and/or second stiffening element are formed from a shape memory material.

21. A device of claim 1 or claim 2 wherein the first and second stiffening elements are of different lengths.

25 22. A device of claim 1 or claim 2 wherein the first stiffening element is a metallic or metallic alloy stylet, and the second stiffening element is formed of a bioresorbable material which dissolves or softens on exposure to a fluid.

30 23. A device of claim 22 wherein the bioresorbable material is selected from the group comprising polyacrylic acid (PAA), polyvinyl alcohol (PVA), polylactic acid (PLA) and polyglycolic acid (PGA).

35 24. A device of claim 1 or claim 2 wherein the device includes an additional layer surrounding the elongate member. the additional layer having a first rate of fluid ingress therethrough and have at least one fluid ingress means formed therein, the rate of fluid ingress through the fluid

ingress means being greater than the first rate of fluid ingress through the additional layer.

25. A device of claim 24 wherein the fluid ingress means comprises one or
5 more slits in the additional layer.

26. A device of claim 1 or claim 2 wherein the first stiffening element is a metal or bioresorbable stylet and the second stiffening element is formed from a shape memory material.
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27. A device of claim 1 or claim 2 wherein at least a portion of an outer surface of the elongate member has a coating of a lubricious material.

28. A device of claim 27 wherein the lubricious material is selected from
15 the group comprising polyacrylic acid (PAA), polyvinyl alcohol (PVA), polylactic acid (PLA) and polyglycolic acid (PGA).

29. A device of claim 6 wherein a resiliently flexible tip member extends forwardly from the first end of the elongate member.
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30. A device of claim 29 wherein the tip member has a plurality of metallic particles dispersed therethrough.

31. A cochlear implant electrode assembly device comprising:
25 an elongate electrode carrier member having a plurality of electrodes mounted thereon and having a first configuration selected to allow said member to be inserted into an implantee's cochlea, a second configuration wherein said elongate member is curved to match a surface of said cochlea, and at least one intermediate configuration between said first and second
30 configurations, said elongate member being made of a resiliently flexible first material:

a first stiffening element made of a material relatively stiffer than said first material; and

a second stiffening element that is relatively stiffer than said first
35 stiffening element:

wherein said first stiffening element and said second stiffening element in combination bias said elongate member into said first configuration and further wherein if either the first stiffening element or the second stiffening element is removed, the elongate member adopts said at least one
 5 intermediate configuration.